

# PHENIX WEEKLY PLANNING



10/22/2009  
Don Lynch



# Completed Tasks

## Task

Start of shutdown tasks  
Erected scaffolds in stations 1, 2 and 3 of MMS  
Tools for RPC Factory: tilt table and burn in test stand  
Designed and fabricated RPC installation components, fixtures  
Procedures and work permits  
Designed, fabricated and assembled PC1 repair fixture  
Installed station 1 MuTrigger FEE upgrades  
Repaired faulty DC FEMs  
Removed HBD East for repairs & Reinstalled  
Massive prep for installation of RPC3 North  
Replaced failed PC1 module and associated PC1 repairs  
Installed RPC3 North east & west bases  
DC East Repairs  
Installed 1W thru 4W RPC3 N  $\frac{1}{2}$  octants & Tested in place  
HBD re-cabled and aligned  
MuID steel top RPC3 N support brackets installed  
RPC pitch control rails installed  
5 thru 8W RPC3 N  $\frac{1}{2}$  octants ready for installation  
MuTrigger FEE radiation monitor slide installed  
RPC prototype absorber de-installed and stowed



# RPC3 North remaining Tasks

TECHNICAL SUPPORT NOON

- Stencil/permanent mark RPC3 lifting fixtures
- Install and test 11 more  $\frac{1}{2}$  octants
- Install gas system and distribution
- Restore gap 5 piping and wiring
- Install 2 Racks in west trough
- Install rack components and wire up  $\frac{1}{2}$  - octants
- Install new vapor barrier
- Install heaters and thermostats
- Re-Install shielding
- Final wiring and commissioning



# This Week 10/19-10/23

## Task

## Start Date

## End Date

Prep RPC3 N racks for installation

Done

Done

Analyze and test EC dumbwaiter

In Progress

10/31

Install new gap5 N cable & pipe supports, cables and piping and leak test piping

In progress

10/31

MuTr HV and FEE test and evaluation as MuTrigger FEE's & RPC's are installed

In progress

11/30

RPC3 North Installation of remaining 12  $\frac{1}{2}$ -Octants

In Progress

10/31

Close MMN Hatch and closeout WP

10/30

10/30

Install 2 RPC3 N racks

10/1

10/30

Install rack components in RPC3 N racks

10/1

10/30

Attach cables to RPC3 N racks and to Detector  $\frac{1}{2}$  octants

10/1

10/30

TECHNICAL SUPPORT NOON

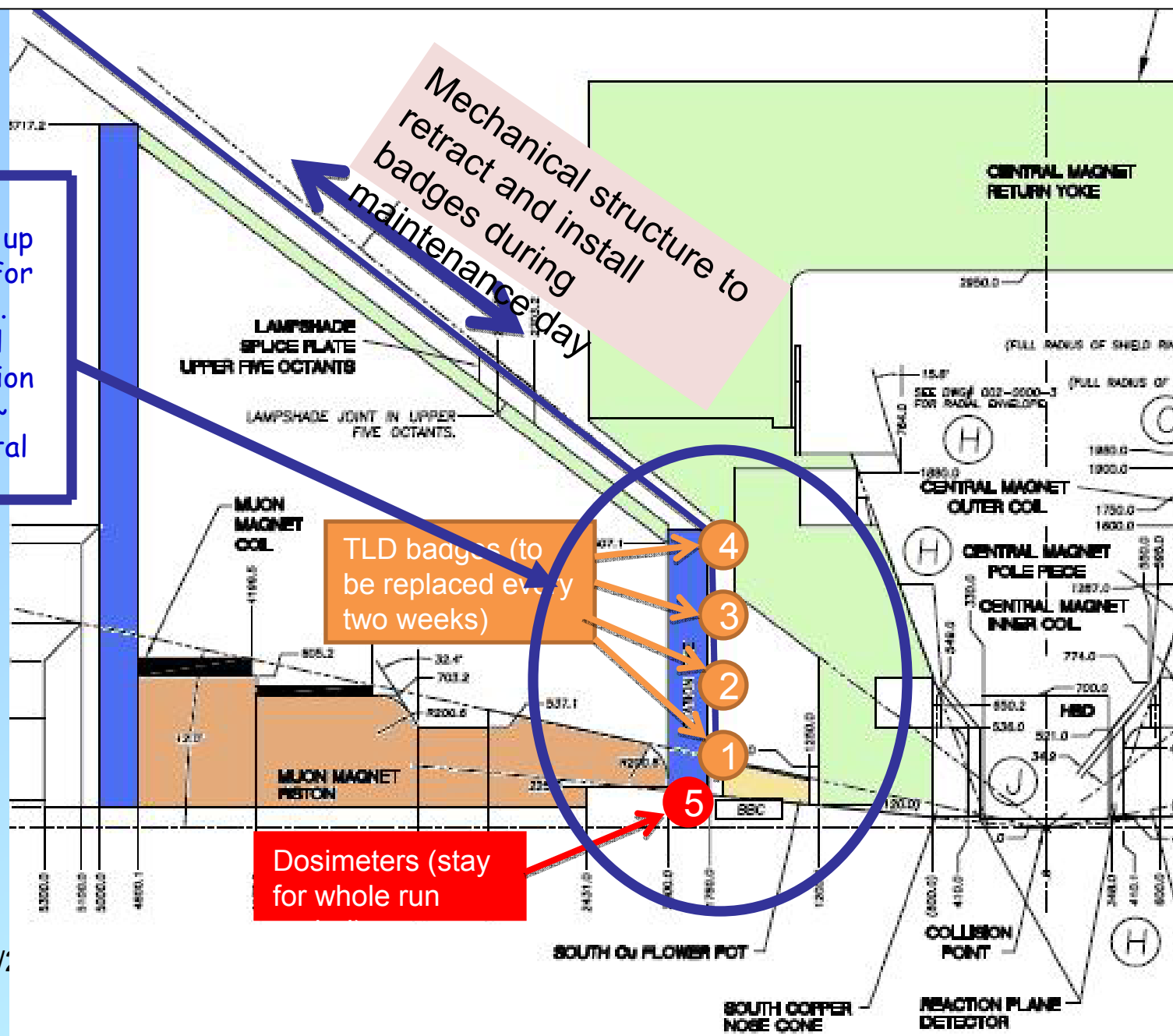


# Location of dosimeters in MuTr.S St.1

PHENIX

TECHNICAL SUPPORT NOON 1700-1800

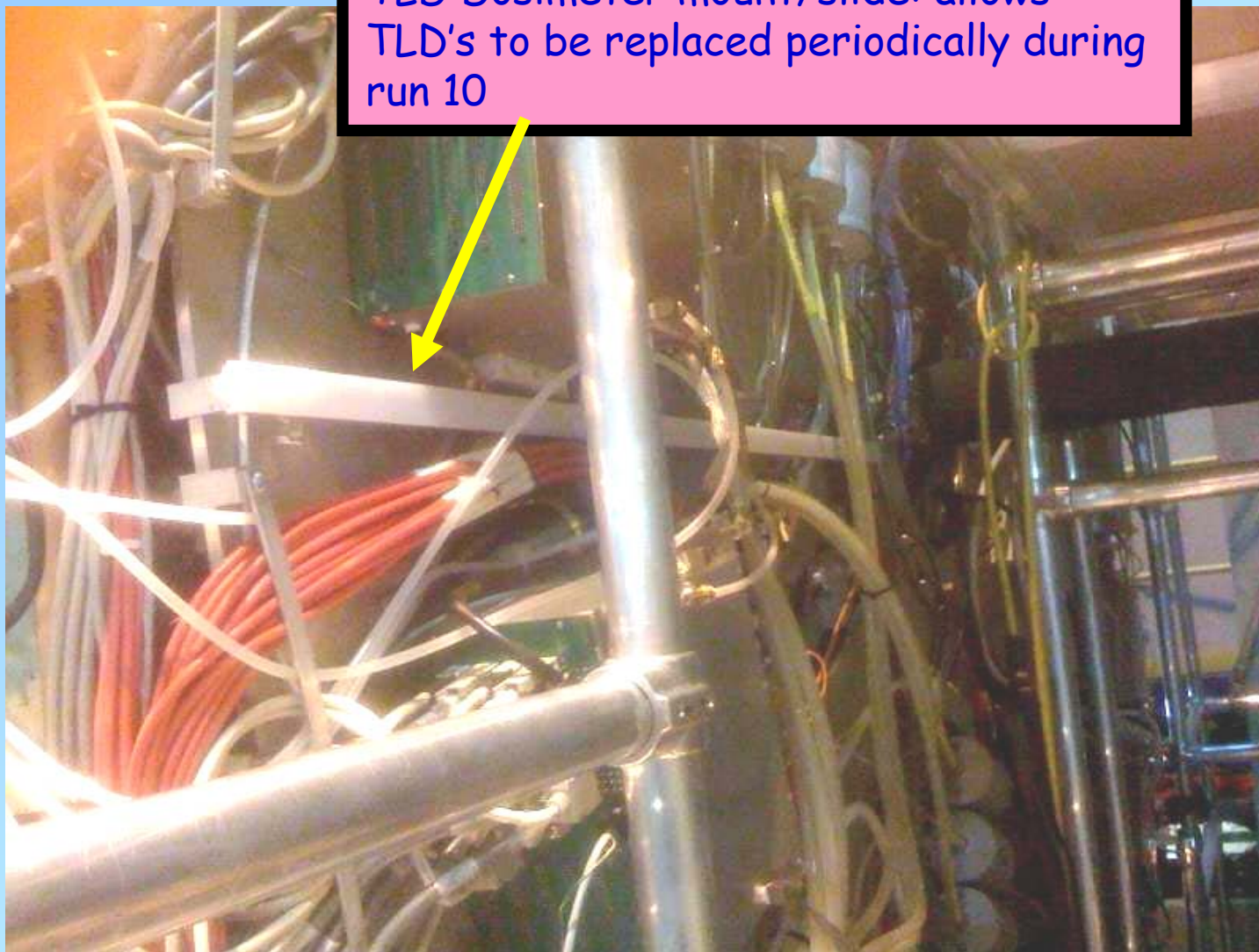
Rotated up 90 deg For clarity.  
Actual installation to be ~ horizontal



10/22/



TLD Dosimeter mount/slide: allows  
TLD's to be replaced periodically during  
run 10





# MuTRG-FEE Installation Status

RIKEN/RBRC  
Yoshinori Fukao



# Installation Status

- Chassis & Electronics Boards (Jimmy, Chris...)
- Optical Patch&LV power Rack (Steve, Frank, Sal)
- Cabling (Jimmy, Mike Rau)
- Plumbing (Mike Lenz, John T.)
- Signal Cable installation

**All done.**



# Remaining Tasks ( as of Oct.1)

- Noise Hunting South St-3, Oct-2
  - About factor of 2 higher than normal
- Noise Hunting South St-1, Oct-8 (1/2day) ✓
  - Noise source is already identified. (from HV). Have some idea how to quench it.
- Thermocouple Installation (a few hours) ✓
- St-1 Re-capacitation work & Source test (3~4 days) ✓  
Requires Gas flowing over the weekend
  - A few anode cards in plane-1
  - Soldering capacitors
  - Terminators
  - Source test

Thanks to Carter



# u-channels



- Custom made by Jimmy
- HV to be tested





# Re-capacitation & Source Test St-1



Capacitor Mount by Sal

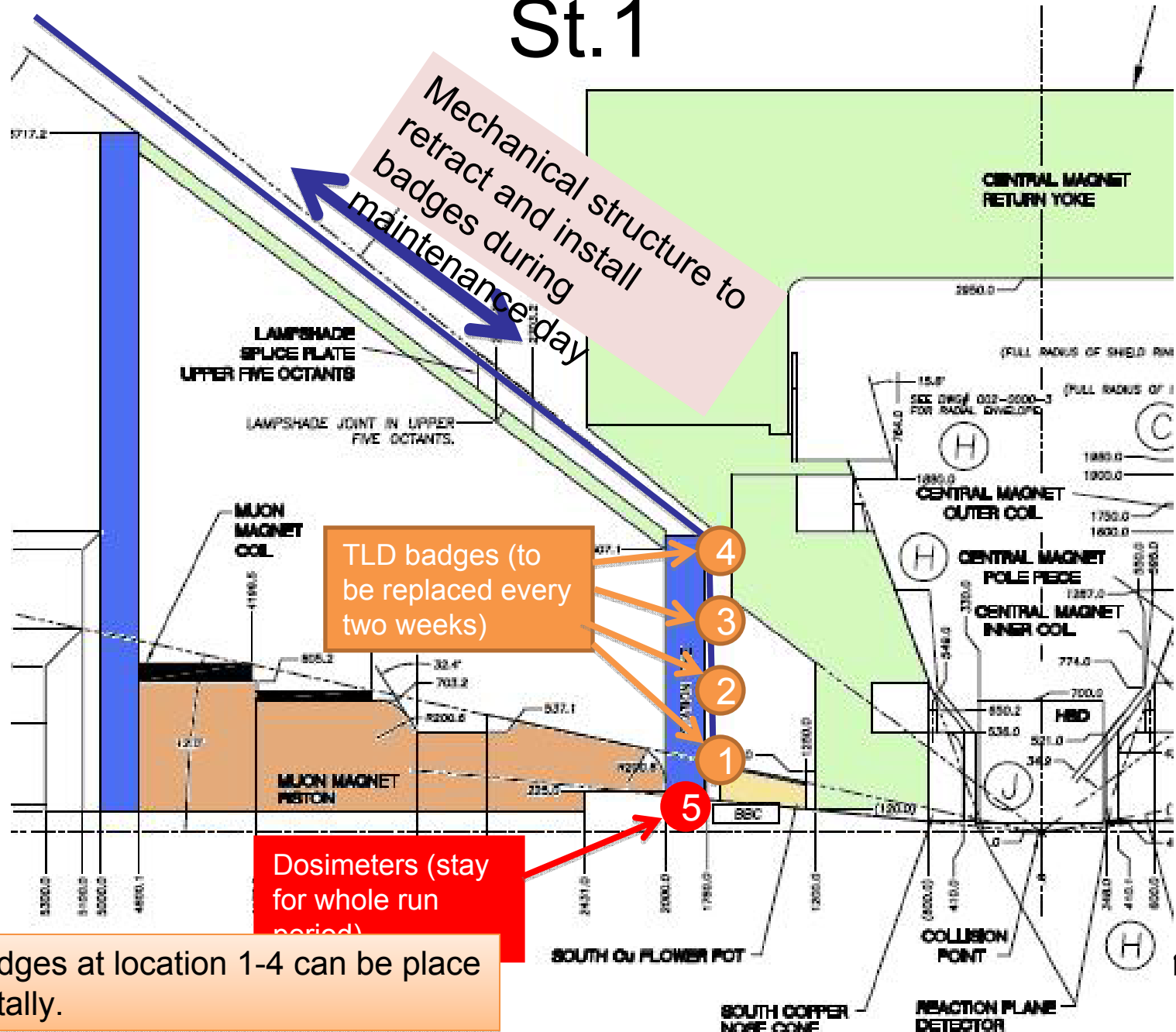
Consistent result with bench test

Keep capacitors and terminators thru Run10



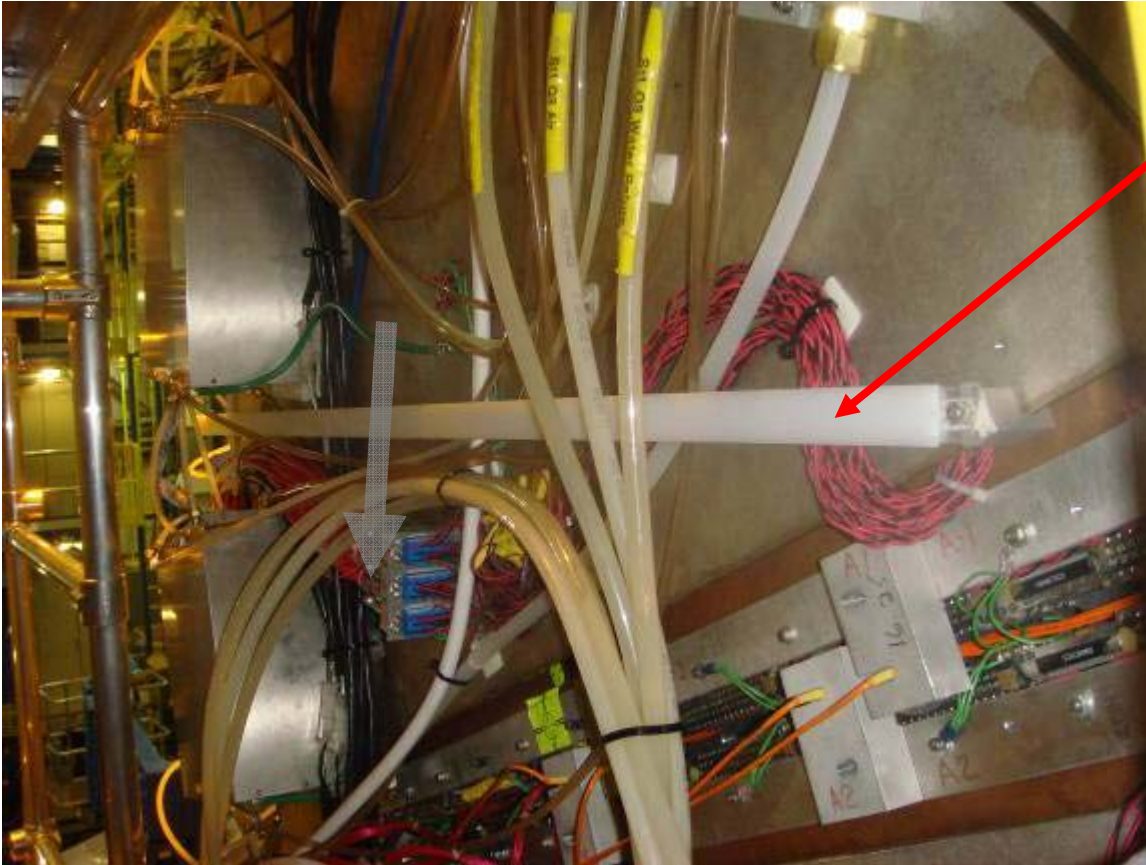
# Location of dosimeters in Muon.S

## St.1





# TLD-Badge



Slides in/out mounted by Jimmy for replacement every other week

4 Badges will be available next week.

John H. and Tsutomu are working to optimize 5th dosimeter to be installed in piston hole

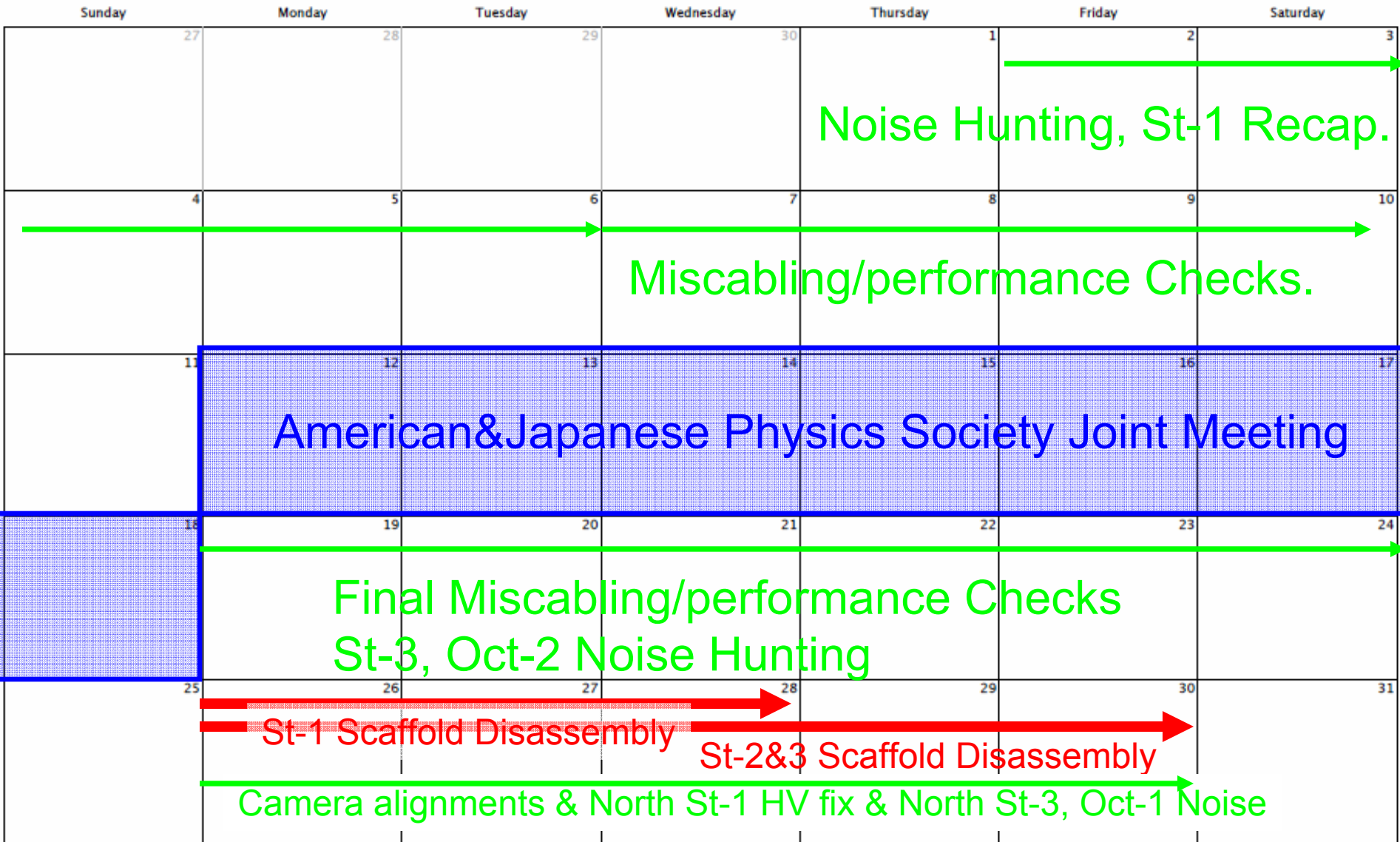
10/22/2009



# October 2009

September 2009							October 2009							November 2009								
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S		
			1	2	3	4						1	2	3		1	2	3	4	5	6	7
6	7	8	9	10	11	12	4	5	6	7	8	9	10		8	9	10	11	12	13	14	
13	14	15	16	17	18	19	11	12	13	14	15	16	17		15	16	17	18	19	20	21	
20	21	22	23	24	25	26	18	19	20	21	22	23	24		22	23	24	25	26	27	28	
27	28	29	30				25	26	27	28	29	30	31		29	30						

祝祭日





# Cable Tray Install

West Octant-2  
once MMS is moved to  
run position

10/22/2009



Install Tray after MMS to Run Position



# Possible Shield in Piston Hole





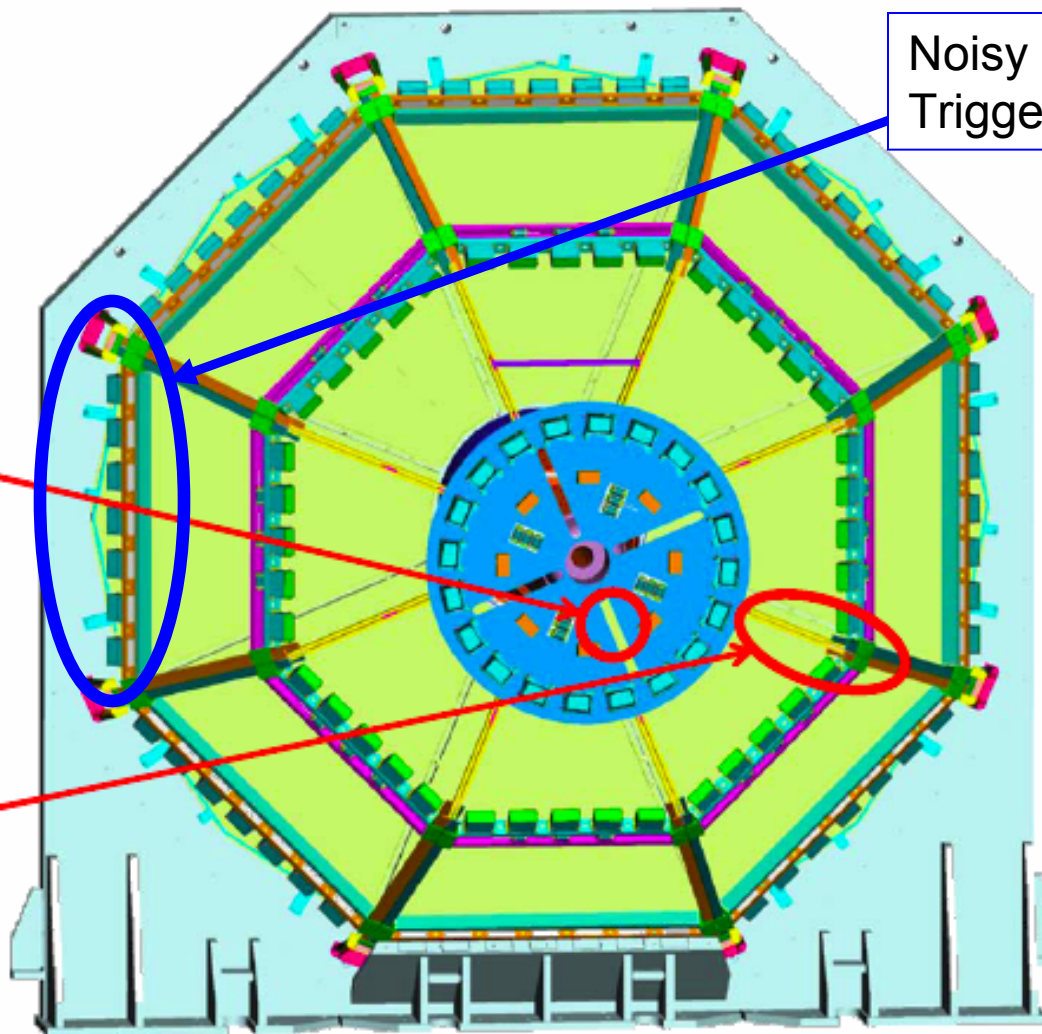
# North Arm Activities

North Arm  
Disconnected HV?

Noisy new  
Trigger electronics

Sta-1 Oct-6 Gap-  
2 Card-6

Sta-3 Oct-6  
Gap-1,2 Card-5



Need to access Station 1 (with ladder) for 1/2 day next  
week or 1st week of November







# HO4W Installed

PHENIX  
HO4W  
Installed



10/22/2009



## Additional HO Carts



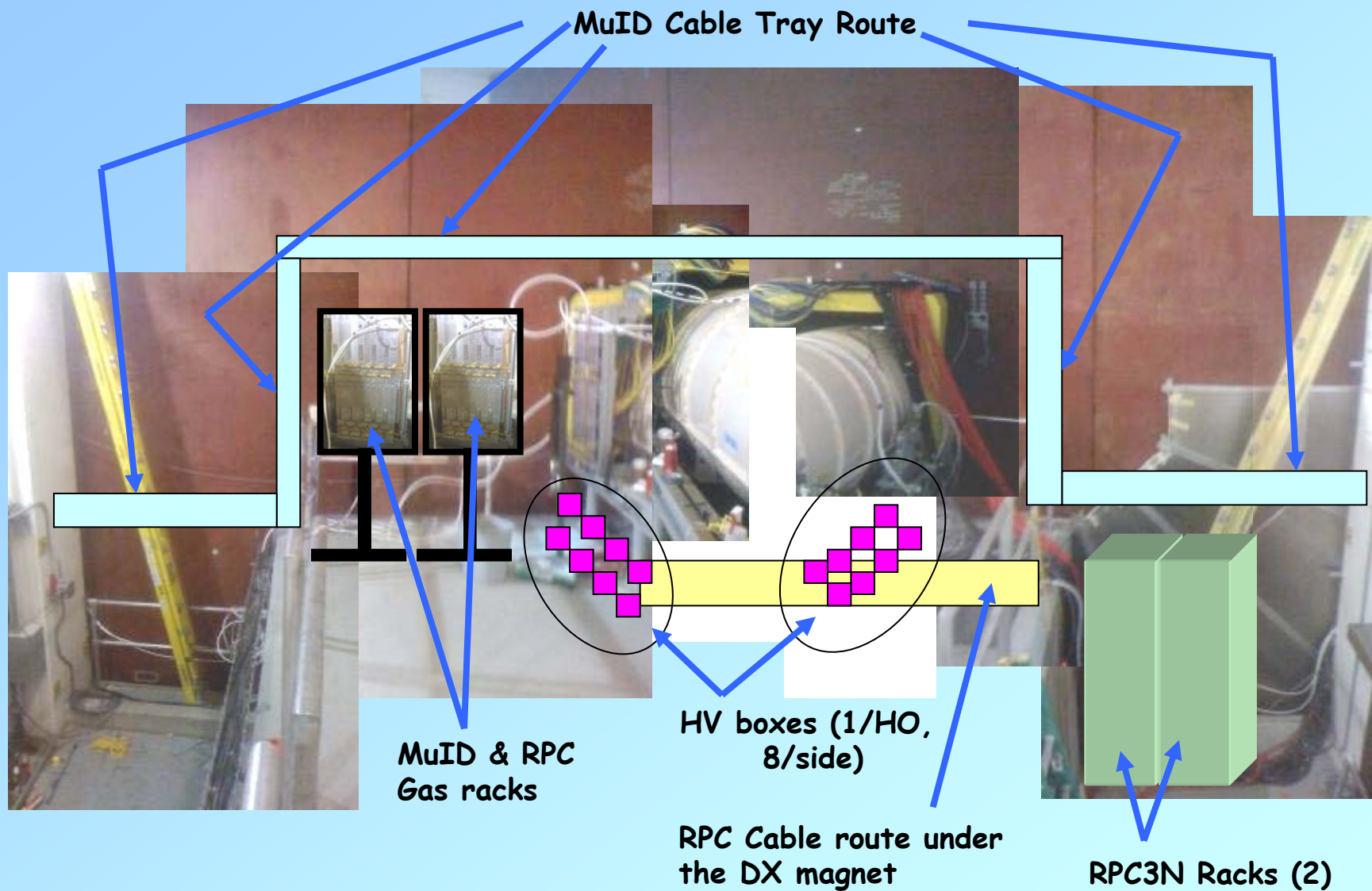


## HO5W Installed

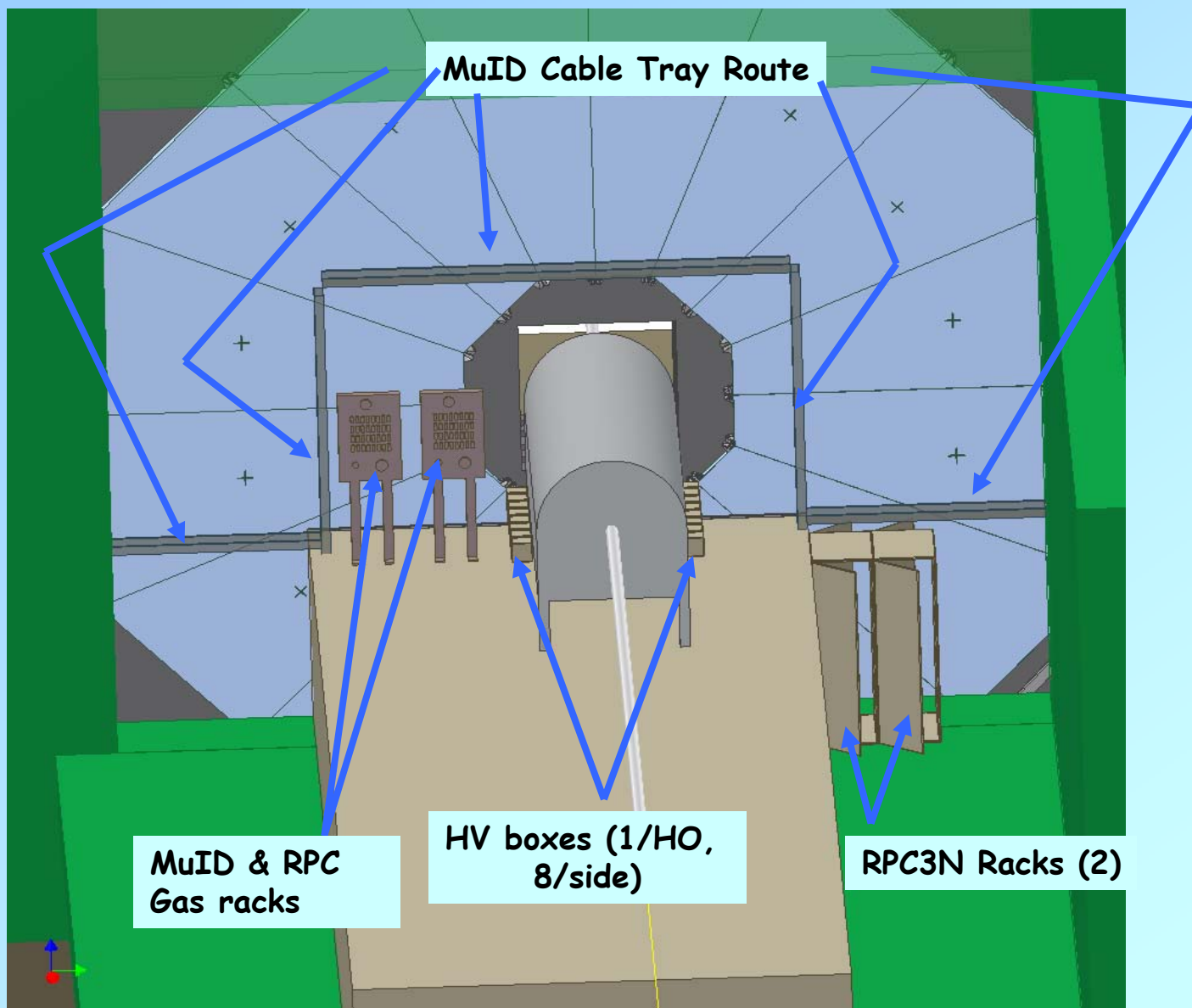


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## Continuing Tasks currently underway (elec.)

## Task

Start Date End Date

Install LV Dist modules in MuTrigger S.

In Progress

12/1

Remove temporary MegaPAC in sRPC1 rack and install new full MegaPAC and finish controls for it

7/20

12/1

VTX/FVTX LV Dist system evaluation (VTX Done)

In Progress

12/1

Prep for production of up to 39 boards in 4 crates (VTX/FVTX)

In Progress

12/1

VTX/FVTX cooling system interlock design

7/20

12/1

Evaluate possible design for 4x1 GL1 L1 triggers

In Progress

12/1

Rack room re-organization

In Progress

12/1

AH Crane 110 switch for lockout

In Progress

12/1

Test/replace rack transient suppression

7/20

12/1

Cordless phones in tunnel

7/20

12/1

Individual relays on all HV supplies

7/20

12/1

Replacement OPC server computers

In Progress

12/1

Replace old PCI type RS485 interface boards with USB-Fiber and Fiber-RS485 system

In Progress

12/1



## More Continuing Tasks currently underway (elec., cont'd.)

Task	Start Date	End Date
Add BNL Fire Alarm Zone status lights in the PCR including alarms.	7/20	12/1
Move LCVS Fan and LCVS backup Fan control switches from the Bypass Box to rack PCR2	7/20	12/1
Re-organize/re-wire panel front on rack PCR2 to accommodate the above and allow for ease of use and readability by staff	7/20	12/1
Remove existing SMCS trip channel LED boxes and Reset switch/indicator panel from rack PCR2	7/20	12/1
Add new alarms into Ronan annunciator System and re-configure as necessary.	7/20	12/1
Install new camera electronics into rack PCR5	7/20	12/1



## More Continuing Tasks currently underway (mechanical)

TECHNICAL SUPPORT NOON

### Task

Start Date End Date

Design supports for Beampipe upgrade  
 Fan Tray replacements (as time permits)  
 Design support for FOCaI  
 Design support for FVTX  
 Design & Fabrication support for VTX

In Progress 11/30  
 In Progress 11/30  
 In Progress 11/30  
 In Progress 11/30  
 In Progress 11/30



# Continuing Tasks currently underway (gas)

TECHNICAL SUPPORT NOON

## Task

Start Date End Date



Get AC's installed in mixing house	7/20	12/1
Investigate shed/larger bottles for R134A	7/20	12/1
Replace damaged compressed air flowmeter	7/20	12/1
Add check valves to some supply lines (as needed)	7/20	12/1
Design and build heat exchanger for HBD system	In Progress	12/1
Replace/ regenerate HBD purifier and driers (late Fall)	In Progress	10/9
Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)	7/20	12/1
Replace/upgrade gas house PC's	In Progress	12/1
Run gas lines to North tunnel	7/20	12/1
Design and build gas humidifier	In Progress	12/1
Layout and build North distribution panel	In Progress	12/1



# October Schedule

## Task

Start Date    End Date

TECHNICAL SUPPORT NOON

Remove Station 1 North scaffolding	10/26	10/28
Remove MMS Sta 2/3 scaffolding	10/26	10/30
Reinstall MMS lampshades	10/30	11/3
Install new PHENIX north tunnel thermal/vapor barrier replacing crystal palace	10/31	11/15
Commission RPC3 N racks and detectors	10/29	11/30
Install new Gas Pads for Ar Dewar & Empty bottle storage	In Progress	11/30
Final leak test new Ar dewar/vaporizer and Closeout	11/15	11/30
Install Empties racks on gas pad	11/15	11/30



## Expected IR Configuration During Shutdown '09

- Now-10/30 MMS south, CM in run position, EC in AH  
WC in west position (against wall), scaffolding  
in station 1 and station 2/3 south
- 10/31-11/10 MMS, CM & WC positions TBD, EC in AH
- 11/10-12/1 MMS & CM in run position, EC and WC can be  
moved east west ~3 ft

These dates are approximate and subject to change



## November Schedule

## Task

Start Date End Date

900N  
1200P  
1300S  
1400C  
1500Z  
1600H  
1700U  
1800I  
1900N  
2000E  
2100X  
2200N

- Install heaters and thermostat(s) for RPC3N thermal control 11/2 11/6
- Reinstall PHENIX North tunnel shielding (3 days) 11/2 11/6
- Replace EC water hoses below EC and test 11/2 11/7
- Cooldown for Run 10 Starts 11/7 11/7
- Move MuID Collars to IR 11/7 11/7
- Disconnect electric & Fiber in EC 11/2 11/7
- Remove ladder & dumb waiter from EC & Fold up EC platforms in AH (1 day) 11/9 11/10
- **Veterans Day Holiday - no work** 11/11 11/11
- Remove IR Floor plates and move 12 ton cart to AH 11/12 11/12
- Move EC to IR 11/12 11/13
- Reconnect electric and fiber to EC 11/16 11/20
- Reinstall ladder & dumb waiter on EC & Fold down EC platforms in IR (1 day) 11/16 11/20
- Pink sheets, white sheets, blue sheets 11/16 12/1
- Move MMS north, Install MuID Collars 11/23 11/25
- Assemble shield wall base and wall in AH 11/23 11/30
- Thanksgiving Holiday - no work 11/26 11/27
- Roll in shield wall 11/30 11/30
- Start Run 10, All shutdown activities completed 12/1 12/1





# 2009 Building Maintenance Issues

- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- Improved Rack Room AC performance: New AC on order
- General maintenance for Trailer Offices and Gas Mixing House stairs, ramps and siding, gutters, etc. (cleaning and repairing worn/rotted wood): Carter has placed work orders
- Icy conditions at mixing house north stairs: Need new Mixing House Gutter
- Purchase and install 2 AC's in Phenix Gas Mixing House  
Suggested model : McMaster part number: 1817K89 (19.5 K btu)





Recent injuries at BNL causing concern, be on the lookout for the following accident precursors (safety investigations on going):

- Ignoring hazards and risks from operations because nothing has happened - not believing that the risks are real
- Modifying systems without adequate considerations of the safety implications or new risks introduced by the changes (what is the worst that can happen) and without adequate reviews by knowledgeable staff
- Ignoring available lessons learned that are available to the facility
- Complacency - accepting small "accidents" that are precursors to the final large accident
- Poor housekeeping - easily ignored but very important (fire loading, blocked exits, tie wraps on the floor that can cause slip injuries, debris on floor that can cause major leg injuries like torn muscles from slips, storing waste bags in front of Motor Control Centers, blocked breakers and disconnects, etc.)

Legacy latent conditions (e.g. STAR arc flash incident). Be aware that there may be latent defects in equipment, procedures and practices that we have become accustomed to. Prepare for the worst that could happen particularly when dealing with legacy conditions.



3. Annual PHENIX safety Review: to be held early Nov.  
Don, Paul, Rob and Steve to prepare presentations for mechanical, electrical, gas system and safety systems.

(Note: does not include RPC factory. RPC factory annual review is due in Jan. 2010.)

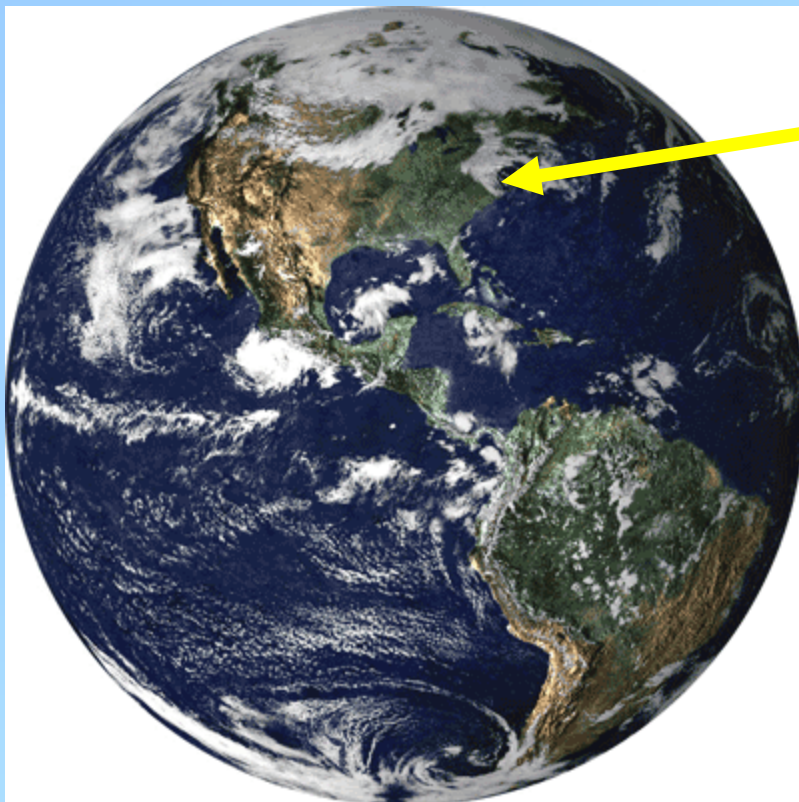
4. Safety First: The safest way is the best way.





# Where To Find PHENIX Engineering Info

TECHNICAL SUPPORT NOOS



You are Here

In Budapest, Hungary the entire police force quit last week. They pooled their money and bought the winning LOTTO ticket (~\$20,000,000). Is crime rampant today in Budapest?

What will happen to PHENIX when we win?

Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

